

Applicant : S. R. Narayanan, et al.
Serial No. : 09/489,515
Filed : January 21, 2000
Page : 2 of 15

Attorney's Docket No.: 06618-408001 / CIT2942 USC 2861

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-10. (Cancelled)

11-17. (Cancelled).

18. (Currently Amended) ~~The~~ A process of claim 17 for making an electrode for a fuel cell, consisting essentially of;

(a) providing a catalyst ink comprising a catalytic material, and poly(vinylidene fluoride);

(b) applying the catalyst ink to at least one side of a substrate, wherein the backing substrate is a carbon paper backing; and

(c) drying the catalyst ink on the substrate.

19. (Currently amended) A process for making a membrane electrode assembly for a fuel cell, comprising:

(a) providing a catalyst ink comprising a catalytic material, and poly(vinylidene fluoride);

(b) applying the catalyst ink to at least one side of a PSSA-PVDF membrane; and

(c) bonding the membrane to at least one electrode.

20. (Previously presented) The process of claim 19, wherein the membrane is bonded to the electrode at a temperature of greater than about 180 °C.

21. (Previously presented) The process of claim 19, wherein the catalyst ink further comprises a plasticizer.

Applicant : S. R. Narayanan, et al.
Serial No. : 09/489,515
Filed : January 21, 2000
Page : 3 of 15

Attorney's Docket No.: 06618-408001 / CIT2942 USC 2861

22. (Previously presented) The process of claim 21, wherein the plasticizer is N,N dimethylacetamide.

23. (Previously presented) The process of claim 19, further comprising adding to the catalyst ink a second ionomer comprising a liquid copolymer of tetrafluoroethylene and perfluorovinylethersulfonic acid.

24. (Previously presented) The process of claim 19, further comprising roughening a surface of the membrane prior to applying the catalyst ink.

25. (Previously presented) The process of claim 19, wherein the electrode comprises a catalyst layer comprising a catalytic material selected from Pt, Pt/Ru and an ionomer.

26. (Currently amended) A fuel cell comprising a membrane electrode assembly, wherein the membrane electrode assembly is made by the process of:

- (a) providing a catalyst ink comprising a catalytic material, and poly(vinylidene fluoride);
- (b) applying the catalyst ink to at least one side of a PSSA-PVDF membrane; and
- (c) bonding the membrane to at least one electrode.

27. (Currently amended) A process for making an electrode for a fuel cell, comprising:

- (a) providing a catalyst ink comprising a catalytic material, and poly(vinylidene fluoride); and
- (b) applying the catalyst ink to at least one side of a PSSA-PVDF membrane.

28. (Cancelled).

29. (Previously presented) The process of claim 27, wherein the ink further comprises a plasticizer.

Applicant : S. R. Narayanan, et al.
Serial No. : 09/489,515
Filed : January 21, 2000
Page : 4 of 15

Attorney's Docket No.: 06618-408001 / CTT2942 USC 2861

30. (Previously presented) The process of claim 29, wherein the plasticizer is N,N dimethylacetamide.

31. (Previously presented) The process of claim 27, further comprising roughening a surface of the membrane prior to applying the catalyst ink.